LISTING OF CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously presented) A method for melting inorganic materials in a melting unit with cooled walls, comprising:

selecting a temperature T_{eff} at which an energy consumption per unit weight of the inorganic materials is at a minimum,

selecting a temperature of a melt in the melting unit in a range from T_{eff} - 20% to T_{eff} + 20%, and

selecting a throughput to be adapted to a required residence time.

2. (Previously presented) The method as claimed in claim 1, wherein the temperature T_{eff} is given by

$$(1)\quad dE_{tot}/dT \Big|_{T=T_{eff}} = 0 = dE_N/dT \Big|_{T=T_{eff}} + dE_V/dT \Big|_{T=T_{eff}}$$

where E_N denotes a useful heat per unit weight of the inorganic materials and E_V denotes the energy loss per unit weight of the inorganic materials.

3. (Previously presented) The method as claimed in claim 2, wherein the useful heat per unit weight has a derivative according to temperature given by $dE_n/dT = c_p$, where c_p denotes a specific heat capacity of the melt.

4. (Previously presented) The method as claimed in claim 2, wherein the energy loss per unit weight $_V$ has a derivative according to temperature given by $dE_V/dT = k\ F_0\ 1/\rho\ \tau_0\ e^{+E/T} + k\ T\ F_0\ 1/\rho\ \tau_0\ (-E/T^2)\ e^{+E/T}$, where k denotes a total transfer of heat through the walls of the melting unit, $F_0 = F/V$ denotes a surface to volume ratio of the melt, ρ denotes a density of the melt, τ_0 denotes the required residence time at a reference temperature T_0, and E denotes a constant corresponding to a characteristic activation temperature.

5. (Previously presented) The method as claimed in claim 1, further comprising feeding thermal energy directly to the melt.

6. (Original) The method as claimed in claim 5, wherein the melt is additionally mixed in the melting unit.

7. (Original) The method as claimed in claim 6, wherein the melt is agitated using a stirrer and/or by bubbling.

8. (Previously presented) The method as claimed in claim 6, further comprising generating a convective flow in the melt.

9. (Previously presented) The method as claimed in claim 8, wherein the convective flow is produced by setting a viscosity of less than 10^3 $dPas^2$ and a melt temperature difference between an inner region of the melt and an outer region of the melt of greater than 150 K.

10. (Previously presented) The method as claimed in claim 5, further comprising supplying the inorganic materials in the form of a batch, which is placed onto a surface of the melt.

11. (Cancelled).

12. (Previously presented) The method as claimed in claim 10, wherein the batch is added in the form of pellets.

13. (Previously presented) The method as claimed in claim 1, further comprising refining the melt.

14. (Previously presented) The method as claimed in claim 13, further comprising producing a convective flow in the melt.

15. (Previously presented) The method as claimed in claim 14, wherein the convective flow is produced by setting a viscosity of ^{3} less than 10^2 dPas and a melt temperature difference between an inner region of the melt and an outer region of the melt of greater than 250 K.

16. (Previously presented) The method as claimed in claim 13, further comprising introducing molten material into a crucible from one side of the crucible at a melt bath surface and discharging the molten material on an opposite side at the melt bath surface.

17. (Previously presented) The method as claimed in claim 1, wherein the inorganic materials are refined using a refining agent.

18. (Previously presented) The method as claimed in claim 1, further comprising continuously feeding and removing the inorganic materials to and from the melt.

19. (Previously presented) The method as claimed in claim 1, wherein the temperature T_{eff} is determined for the melting-down of a batch.

20. (Original) The method as claimed in claim 19, wherein the temperature T_{eff} is determined for a melt which is additionally mixed.

21. (Previously presented) The method as claimed in claim 19, wherein the temperature T_{eff} is determined for a melt which has a viscosity of less than 10^3 dPas^2 and is melted in a unit at which a temperature difference in the melt between an inner region of the melt and an outer region of the melt of greater than 150 K.

22. (Previously presented) The method as claimed in claim 1, wherein the temperature T_{eff} is determined for refining the melt.

23. (Previously presented) The method as claimed in claim 22, wherein the temperature T_{eff} is determined for a melt which has a viscosity of less than 10^3 $dPas^4$ and is melted in a unit at which a temperature difference in the melt between an inner region of the melt and an outer region of the melt of greater than 150 K.

24. (Previously presented) The method as claimed in claim 22, wherein the temperature T_{eff} is determined for a melt in which molten material is introduced into a crucible from one side of the crucible at a melt bath surface and is discharged again on an opposite side of the crucible at the melt bath surface.

25. (Previously presented) The method as claimed in claim 24, further comprising feeding thermal energy directly to the melt.

26. (Previously presented) The method as claimed in claim 25, wherein the thermal energy is fed to the melt by direct conductive heating.

27. (Previously presented) The method as claimed in claim 25, wherein the thermal energy is fed to the melt by direct inductive heating.

28. (Previously presented) The method as claimed in claim 1, wherein at least one region of the melt is heated to more than 1700°C.

29. (Previously presented) The method as claimed in claim 2, wherein the temperature of at least one region of the melt is selected to be less than or equal to a temperature at which the useful heat and the energy loss per unit weight are equal.

30-31. (Cancelled).

32. (Previously presented) The method as claimed in claim 1, wherein the required residence time comprises a melt-down time.

33. (Previously presented) The method as claimed in claim 1, wherein the required residence time comprises a refining time.

34-39. (Cancelled).